

## ENGINE PERFORMANCE

In the following check list, it is assumed that the engine runs, but is not operating at peak performance. This will serve as a starting point from which to isolate a performance malfunction.

The possible causes for each malfunction are listed in a logical sequence and in order of probability.

### Engine Will Not Idle

- a. Carburetor incorrectly adjusted (too lean or too rich).
- b. Fouled or improperly gapped spark plug.
- c. Leaking head gasket(s) or vacuum leak.
- d. Ignition timing incorrect.
- e. Weak or faulty DC-CDI unit or pulse generator.
- f. Improper valve timing.
- g. Obstructed fuel line or fuel shutoff valve.
- h. Low engine compression.
- i. Starter valve (choke) stuck in the open position.
- j. Incorrect pilot screw adjustment.
- k. Clogged air filter element.
- l. Improper valve clearance.

### Engine Misses at High Speed

- a. Fouled or improperly gapped spark plug.
- b. Improper ignition timing.
- c. Improper main jet selection in carburetor.
- d. Clogged jets in the carburetor.
- e. Weak ignition coil.
- f. Weak or faulty DC-CDI unit or pulse generator.
- g. Improper valve timing.
- h. Obstructed fuel line or fuel shutoff valve.

### Engine Overheating

- a. Obstructed cooling fins on the cylinder and cylinder head.
- b. Improper ignition timing.
- c. Improper spark plug heat range.
- d. Dragging brake(s).

### Smoky Exhaust and Engine Runs Roughly

- a. Clogged air filter element.
- b. Carburetor adjustment incorrect—mixture too rich.
- c. Carburetor floats damaged or incorrectly adjusted.
- d. Choke not operating correctly.
- e. Water or other contaminants in fuel.
- f. Clogged fuel line.
- g. Excessive piston-to-cylinder clearance.
- h. Valve component wear.

### Engine Loses Power

- a. Carburetor incorrectly adjusted.
- b. Engine overheating.
- c. Improper ignition timing.
- d. Ignition timing incorrect due to ignition system malfunction.
- e. Incorrectly gapped spark plug.
- f. Weak ignition coil.
- g. Weak or faulty DC-CDI unit.
- h. Weak pulse generator.
- i. Obstructed muffler.
- j. Dragging brake(s).
- k. Improper valve clearance.

### Engine Lacks Acceleration

- a. Carburetor adjustment incorrect (too lean).
- b. Clogged fuel line.
- c. Ignition timing incorrect due to ignition system malfunction.
- d. Dragging brake(s).

### Engine Backfires

- a. Improper ignition timing.
- b. Carburetor improperly adjusted.
- c. Lean fuel mixture.

### Engine Misfires During Acceleration

- a. Improper ignition timing.
- b. Lean fuel mixture.

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